DOCUMENT RESUME

ED 311 016 SP 031 442

AUTHOR Herzog, A. Regula; And Others
TITLE Sex Differences in Adolescents' Health-Threatening Behaviors: What Accounts for Them? Monitoring the Future. Occasional Paper 23.
INSTITUTION Michigan Univ., Ann Arbor. Inst. for Social Research.
PUB DATE Dec 87
NOTE 60p.
PUB TYPE Reports - Research/Technical (143)

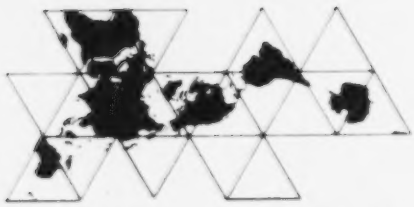
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Alcohol Abuse; Drug Abuse; High Schools; *High School Seniors; Injuries; Life Style; *Physical Health; Risk; *Sex Differences; Smoking; *Social Behavior; *Student Characteristics; Traffic Accidents

ABSTRACT

Young men are more likely than young women to engage in behaviors that threaten their health, including alcohol and drug use, risky driving, and becoming injured by others. The explanation of these sex differences is the focus of this paper. Findings from nationwide samples of high school seniors are consistent with a model that posits personal characteristics related to commitment to educational and religious institutions and to the roles of the sexes in this society; opportunity factors; and drug use patterns as explanatory factors of the sex differences. Controlling in multivariate analyses for these factors reduces or eliminates the bivariate sex differences in the health-threatening behaviors. The number of cigarettes smoked during the last month shows no bivariate sex differences; however, when the controls are introduced, there emerges a clear sex difference to the disadvantage of young women. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED311016



monitoring **the future**

occasional paper series

paper 23

SEX DIFFERENCES IN ADOLESCENTS' HEALTH-THREATENING BEHAVIORS: WHAT ACCOUNTS FOR THEM?

A. Regula Herzog, Jerald G. Bachman,
Lloyd D. Johnston, and Patrick M. O'Malley

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J Bachman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

SP031 442

Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth

As its title suggests, this study is intended to assess the changing lifestyles, values, and preferences of American youth on a continuing basis. Each year since 1975 about 17,000 seniors have participated in the annual survey, which is conducted in some 130 high schools nationwide. In addition, subsamples of seniors from previously participating classes receive follow-up questionnaires by mail each year.

This Occasional Paper Series is intended to disseminate a variety of products from the study, including pre-publication (and somewhat more detailed) versions of journal articles, other substantive articles, and methodological papers.

A full listing of occasional papers and other study reports is available from Monitoring the Future, Institute for Social Research, The University of Michigan, P.O. Box 1248, Ann Arbor, MI 48106.

SEX DIFFERENCES IN ADOLESCENT HEALTH-THREATENING BEHAVIORS: WHAT ACCOUNTS FOR THEM?

Monitoring the Future Occasional Paper 23

A. Regula Herzog, Jerald G. Bachman,
Lloyd D. Johnston, and Patrick M. O'Malley

Institute for Social Research
The University of Michigan

December 1987

TABLE OF CONTENTS

List of Tables iii

Introduction 1

Conceptualization and prior research 2

Methods 3

Design 3

Quality of the data 4

Measures 4

Data analysis 6

Results 7

Nature of sex differences 7

Relationships between dependent variables 8

Explanations of sex differences 8

Summary and Discussion 10

References 13

LIST OF TABLES

1. Health Threatening Behaviors, by Sex 16

2. Correlation Matrix, Total Samples 17

2a. Correlation Matrix, Males 19

2b. Correlation Matrix, Females 21

3. Regression Analyses for the Number of Drinks Consumed During the Last 30 Days 23

4. Regression Analyses for Five Drinks or More Consumed During the Last 30 Days 24

5. Regression Analyses for the Number of Cigarettes Smoked During the Last 30 Days 25

6. Regression Analyses for the Number of Occasions on Which Marijuana and Hashish Were Consumed During the Last 30 Days 26

7. Regression Analyses for the Number of Traffic Tickets During the Last 12 Months 27

8. Regression Analyses for the Number of Traffic Tickets After Alcohol Consumption During the Last Year 28

9. Regression Analyses for the Number of Traffic Tickets After Marijuana Consumption During the Last Year 29

10. Regression Analyses for the Number of Accidents During the Last 12 Months 30

11. Regression Analyses for the Number of Accidents After Alcohol Consumption During the Last Year 31

12. Regression Analyses for the Number of Accidents After Marijuana Consumption During the Last Year 32

13. Regression Analyses for Injury With a Weapon During the Last Year 33

14. Regression Analyses for Injury Without a Weapon During the Last Year .. 34

15. Regression Analyses for Threat With a Weapon During the Last Year 35

16. Regression Analyses for Threat With Injury During the Last Year 36

Abstract

Young men are more likely than young women to engage in behaviors that threaten their health, including alcohol and drug use, risky driving, and becoming injured by others. The explanation of these sex differences is the focus of this paper. Findings from nationwide samples of high school seniors are consistent with a model that posits personal characteristics related to commitment to educational and religious institutions and to the roles of the sexes in this society; opportunity factors; and drug use patterns as explanatory factors of the sex differences. Controlling in multivariate analyses for these factors reduces or eliminates the bivariate sex differences in the health-threatening behaviors. The number of cigarettes smoked during the last month shows no bivariate sex difference; however, when the same controls are introduced, there emerges a clear sex difference to the disadvantage of young women.

The longevity differential between men and women in the United States and many other developed countries has been well documented, but the explanation of the differential is much less well understood. While suggestions for possible explanations abound, few systematic research efforts have been conducted to test the suggested explanations. This paper tests explanations for sex differences among adolescents, where the sex differential in mortality is the largest, on a number of behaviors that are known to be closely linked to major causes of death.

Introduction

It is well-established that in the United States women live longer than men (Nathanson, 1984; Verbrugge, 1976; Waldron, 1982; Wingard, 1984). Survival rates for women are higher at all age levels, with the size of the difference varying with age. The largest ratio of male to female deaths occurs in adolescence and young adulthood; the largest difference in absolute numbers of deaths occurs in older age (Wingard, 1984).

On most of the leading causes of death, the rates for men exceed those for women (Verbrugge, 1976; 1985; Waldron, 1982). Of course, causes of death vary by age. Among adolescents, accidents (particularly motor vehicle accidents), homicides, and suicides predominate as causes of death; and each of these occurs at least three times as often among young men as among young women (Lopez, 1983; National Center for Health Statistics, 1982a). Among older adults, heart disease and malignant neoplasm are two of the major causes of death, and both show substantial sex differentials (National Center for Health Statistics, 1982b).

What accounts for these sex differences in mortality and morbidity? The basic sex difference is observed in all developed societies; however, the fact that its size varies considerably across societies and over time (Veevers and Gee, 1986) suggests that the explanation cannot rely on biological mechanisms alone – social-behavioral factors must also contribute to it. The fact that so many of the major causes of death on which men exceed women have behavioral components further suggests that social-behavioral explanations need to be taken into account. To explain mortality among the young, proneness for accidents and homicide should be investigated; among the middle-aged and old, health behaviors that are related to heart disease and malignant neoplasm such as smoking and drinking are of greatest relevance. It must further be noted that some health behaviors that take their toll late in life may have their origin at a much earlier point in life, when children and young adults acquire certain life styles and behavior patterns. In fact, cigarette smoking may be less of a risk factor for mortality from heart disease among today's old than among middle-aged and young adults (Kannel and Gordon, 1980). Thus, adolescence and young adulthood are suggested as critical periods for the explanation of sex differences in mortality, and sex differences in accidents, injuries by others, smoking, and alcohol consumption demand particular attention.

In this paper we examine some of the health-threatening behaviors among young women and men that are thought to contribute to the sex differential in early as well as later mortality, and we attempt to explain these sex differences. Specifically, sex differences in smoking, drinking, illicit drug use, unsafe driving, and being victimized are addressed using data from the Monitoring the Future project, an ongoing nationwide study of youth.

Conceptualization and prior research

Drug use behavior, risky driving behavior, and victimization are usually investigated within very distinct research traditions that are only minimally interrelated. Therefore explanations are usually specific to a subset of behaviors. Yet, upon closer inspection, similar explanations emerge for the different health-threatening behaviors that can be classified into a few more general categories. The ones that are relevant for the explanation of the sex differences will be described below. One set of explanations that is discussed in the literature on delinquency and drug use refers to young peoples' involvement in and commitment to conventional social institutions and social values (Gersick et al., 1981; Hirschi, 1969; Johnson, 1979; Kandel, 1980; Thompson and Wilsnack, 1984). According to this view, weakened internalized norms or lessened ties to significant others permit delinquent behaviors and drug use to occur. Typical conventional social institutions are the family, the educational system, the religious organizations, and the world of work. Since females tend to be more religious and more devoted to educational endeavors (Johnston, Bachman, and O'Malley, 1986a), this might explain a part of their lesser delinquency and use of drugs. Along similar lines, it has been suggested that females tend to be less rebellious and that this might contribute to the fact that until recently they were less likely to smoke (Waldron, 1982).

Another set of explanations refers to the opportunity to engage in health-threatening behaviors. For example a person is more likely to have a car accident if he or she drives a lot; and since males drive more than females, at least a part of the difference in automobile accidents may be accounted for by the difference in amount of driving (Johnston, Bachman, and O'Malley, 1986a; Weber, 1975; Veevers, 1982).

It has also been suggested that being away from home without the supervision by parents or other persons of authority might create opportunities for young peoples' drug use and other delinquent behaviors, as well as increasing their odds of becoming victimized (Bachman, Johnston and O'Malley, 1981; Cohen and Felson, 1979; Hindelang, Gottfredson, and Garofalo, 1978). Young persons spend less time in family or work settings than do children or middle-aged and older adults, but more with non-family members in public places or other gatherings. And young men spend more time in such settings than young women (Johnston, Bachman, and O'Malley, 1986a).

Drug use, in particular alcohol use, has been shown to play a major role in driving violations, in injuries, and in homicides among youth (Lloyd and Venus, 1983; Warren and Simpson, 1980; Wolfgang, 1958). Adolescent men drink more alcohol than women. Although methodological problems have made if difficult to conduct epidemiological studies of the role of marijuana in the causation of driving problems and injuries inflicted by others, experimental evidence is quite conclusive that psychomotor performance required for driving is seriously impaired under the influence of marijuana (Moskowitz, 1985). Use of other illicit drugs is also likely to have harmful effects on psychomotor performance and therefore on driving performance, though the nature of impairment would vary by drug. As with alcohol, young men use more marijuana and other illicit drugs than young women do (Johnston, Bachman, and O'Malley, 1986b).

Some who have noted the relatively consistent and continuing sex differential in mortality have proposed overarching explanations. For example, it has been suggested that the quite different roles of the two sexes in this and in many other developed societies can provide a parsimonious explanation for why men and women behave differently with regard to some of the critical predictors of mortality. By virtue of the more aggressive, daring, independent male role prescriptions, men are more likely to engage in risky and dangerous behaviors, while women, due to female role prescriptions for nurturance and

dependency, are more likely to engage in cautious and preventive behaviors (Nathanson, 1984; National Center for Health Statistics, 1983; Veevers and Gee, 1986). In other words, a role explanation is proposed to account for sex differences in all health-threatening behaviors. This explanation cannot account for the non-existent and reversed sex differences on some health-threatening behaviors, for example, cigarette smoking.

In this paper a general explanatory model, representing all the major categories of variables discussed so far, is applied to the sex differences in behaviors of problem-driving; cigarette, alcohol, and drug use; and becoming victimized. It will be examined whether such a model can account for sex differences in health-threatening behaviors among young people. Basically, the model is intended to determine the extent to which there remains any direct effect of sex on the various outcome (dependent) variables, when controlling for the various possible intervening (predictor) variables.

We will be interested to see whether the same predictors account for the sex differences regardless of which health-threatening behavior is involved, or whether predictors vary depending on the specific behavior that is being analyzed. A corollary of a model that explains sex differences in all health-threatening behaviors is that all the health-threatening behaviors are related to each other. Such a view is implied by those who propose a general explanatory model for all health-threatening behaviors and by those who promote an explicit view that, for example, drug use is related to delinquent behaviors (Hirschi, 1969; Johnston, O'Malley, and Eveland, 1978; Osgood, Johnston, O'Malley, and Bachman, 1987; Thompson and Wilsnack, 1984). Such a view is, however, not shared by others who argue that specific behaviors, such as the use of various drugs, must be understood as separate phenomena (Kandel, 1980).

Our model includes three types of predictors of health-threatening behaviors: personal characteristics, opportunity factors, and — for risky-driving and injuries inflicted by others — drug use. Among personal characteristics we include a number of personality-type characteristics such as propensity to take risks and rebelliousness against authorities, as well as involvement in adult institutions of education, religion, and work. Among opportunity factors we include the amount of weekly driving, the frequency of going out in the evening, the frequency of cutting classes, the frequency of committing delinquent behaviors, the amount of money earned per week, and the number of hours spent in schoolwork per week. Among the drug use variables we include smoking, drinking, and marijuana use. We view the personal characteristics as the most remote causal factors. Opportunity factors are more recent in the causal chain, potentially mediating the effects of the personal characteristics. Drug use factors are the most proximal in the causal chain, potentially mediating both the effects of personal characteristics and opportunity factors.

Methods

Design

Since 1975 the Monitoring the Future project has conducted surveys of large, nationally representative samples of high school seniors. Each year's sample of approximately 16,000 seniors is located in approximately 115 public and 15 private high schools nationwide, and data are collected in the spring of each year. The design and procedures for the project have been spelled out extensively elsewhere (Bachman and Johnston, 1978; Johnston, Bachman, and O'Malley, 1986a; b).

The sampling procedure is multi-stage, with stage 1 the selection of particular geographic areas, stage 2 the selection of one or more high schools in each area, and stage 3 the selection of seniors within each high school. This procedure results in an area probability sample of the 48 coterminous states.

Data are collected by questionnaires administered in classrooms during a normal class period, although circumstances in some schools require larger group administrations. The surveys are administered by locally-based Institute for Social Research representatives and their assistants, following carefully standardized procedures.

Data for this paper were collected from the graduating classes of 1980 through 1983. Data were collapsed across the four years to obtain a larger number of cases for analysis.[1] While a cross-sectional design does not permit any definitive assessment of the direction of causation, as specified in the general model described above, it can at least test whether the data are consistent with the hypothesized model. For example, rebellion against authority figures (measured in the Monitoring the Future surveys as the frequency of "quarrels with people in position of authority") is conceptualized here as cause of delinquent behaviors and drug use, and the results of our analyses will show that such a conceptualization is consistent with the data. But it is theoretically also possible that such quarrels are the result of the young person's problem behaviors that cause the friction with persons of authority. This possibility cannot be excluded on empirical grounds in a cross-sectional design.

Quality of the data

Each year between 66% and 80% of the selected schools agree to participate in the survey. For each school that declines to participate, a similar school (matched on size, urbanicity, etc.) is recruited. The resulting sample of schools is judged to be representative of all high schools in the coterminous United States.

Completed questionnaires are obtained from 77% to 84% of all sampled students each year. The primary reason that students are not included is absence from class. The loss of absentees creates some potential biases, because those who are most often absent differ somewhat from those who are less often absent. However, after extensive analyses with respect to drug use (where the bias would likely be greatest), the biases were judged to be sufficiently small as not to warrant complex adjustment procedures.

One additional limitation in the representativeness of the design is that is does not include in the target population those young men and women who drop out of high school before graduation. A relatively small proportion of the entire age cohort, perhaps 15% to 20%, is thus excluded. While the omission of dropouts introduces some biases into estimates of characteristics of the entire age group, the extent of those biases is limited by their relatively small proportion.

Measures

All measures discussed here are based on students' responses to closed-ended

---

[1] For the variables of interest in this paper few clear period trends were observed across the four different years, thus justifying the aggregation across years.

questionnaire items. Although five different questionnaire forms are used in the study, the present report deals only with questions contained in one particular form. Each form is filled out by a random 20% of the sample; thus, the total number of cases available for analysis is about 3,200 from each of the four years included.

Dependent measures. The following drug use measures were used. Alcohol use was measured by two questions. The first uses a 7-point scale and asks about the frequency of drinking: "On how many occasions have you had alcoholic beverages to drink during the last 30 days?" (NUMBER DRINKS/30 DAYS). A question about binge drinking uses a 6-point scale and asks: "Think back over the last two weeks. How many times have you had five or more drinks in a row?" (NUMBER 5+ DRINKS IN A ROW). Cigarette smoking was measured by one question, which has a 7-point answer scale: "How frequently have you smoked cigarettes in the past 30 days?" (NUMBER CIGARETTES/30 DAYS). Marijuana use also was measured by one question using a 7-point answer scale: "On how many occasions (if any) have you used marijuana (grass, pot) or hashish (hash, hash oil) during the last 30 days?" (NUMBER MARIJUAANA AND HASHISH/30 DAYS).

The following measures for risky driving were used. The number of traffic tickets during the past year was measured by three questions: "Within the last 12 months, how many times, if any, have you received a ticket (or been stopped and warned) for moving violations such as speeding, running a stop light, or improper passing?" (4-point response scale); "How many of these tickets or warnings occurred after you were drinking alcoholic beverages?" (4-point response scale); "How many of these tickets or warnings occurred after you were smoking marijuana or hashish?" (4-point response scale). The number of accidents was also measured by three questions "During the last 12 months how many accidents have you had while you were driving (whether or not you were responsible)?" (4-point scale); "How many of these accidents occurred after you were drinking alcoholic beverages?" (4-point scale); "How many of these accidents occurred after you were smoking marijuana or hashish?" (4-point scale).

Becoming injured at the hand of others was measured by the following four questions "During the last 12 months, how often has someone injured you with a weapon (like a knife, gun or club?)" (5-point response scale); "Has someone threatened you with a weapon, but not actually injured you?" (5-point response scale); "Has someone injured you on purpose without using a weapon?" (5-point response scale); "Has an unarmed person threatened you with injury, but not actually injured you?" (5-point response scale).

Explanatory measures. The explanatory measures will be described in a more summary fashion, but the exact question wordings may be found in any one of the annual volumes of descriptive results published by the project (e.g., Johnston, Bachman, and O'Malley, 1986a).

Among the personal characteristics the following measures were included. Involvement in education/school is measured by three items: a question asking how much the respondent likes school (LIKING OF SCHOOL), a question asking his/her grade point average in high school (GRADE POINT AVERAGE), and a question asking how much time he/she spends on homework in an average week (HOURS OF HOMEWORK/WEEK). A measure of religious involvement was formed by averaging responses to two questions asking how often the respondent attends religious services and how important religion is in his/her life (RELIGIOUS COMMITMENT). Involvement in work is measured by a question on how many hours per week the respondent works in a job (HOURS OF PAID WORK/WEEK). Risk-taking propensity is assessed by an index formed as the average of two questions about whether the respondent sees him/herself as somebody who likes to do

"things that are a little risky" and "things that are a little dangerous" (RISK TAKING PROPENSITY). Rebellion against authorities is assessed by one question on how often the respondent quarrels with people in positions of authority (ARGUMENTS WITH AUTHORITY).

Among opportunity factors the following measures are included. The amount of driving is assessed by a question about how much the respondent drives in an average week (MILES DRIVEN/WEEK). The frequency of going out is assessed by two measures: the first is an index formed as the average of responses to two questions about how often the respondent goes to taverns and bars and how often he/she goes to parties (FREQUENCY BARS AND PARTIES), and the second is a single question on how many evenings a week the respondent goes out for fun and recreation (TIMES GOING OUT/ WEEK). The frequency of failing to attend school is assessed by an index formed as the average of two questions on the frequency of skipping an entire day of school and the frequency of skipping classes (SKIPPING SCHOOL).

Delinquent behaviors are assessed by two indices, one formed as the average of responses to five questions dealing with the frequency of interpersonal, aggressive behavior (e.g., hurt someone badly, hit a supervisor) (AGGRESSIVE BEHAVIORS), and the other as the average of responses to nine questions dealing with the frequency of non-interpersonal property offenses (e.g., shoplifting, trespassing, damaging school property) (PROPERTY VIOLATIONS). Finally, financial means were assessed by a question on how much money the respondent earns per average week from a job (WAGES/WEEK).

Drug use variables are described above under dependent variables.

Data analysis

First, simple proportions showing male-female comparisons for all of the health-threatening behaviors discussed in this paper are shown (Table 1). Consistent with previous publications (e.g., Bachman, Johnston, and O'Malley, 1981), these variables were bracketed into logical dichotomies for ease of presentation. For alcohol use it is shown whether any alcoholic beverages were consumed during the previous 30 days, whether alcoholic beverages were consumed on approximately every day during the previous 30 days[2], and whether 5 or more drinks were consumed on at least one occasion during the previous two weeks. For cigarette smoking it is shown whether any cigarettes were smoked during the previous 30 days, and whether as much as one-half of a pack or more per day was consumed during the previous 30 days[2]. For marijuana use it is shown whether any marijuana was consumed during the previous 30 days, and whether marijuana was consumed on approximately every day during the previous 30 days[2]. For the remaining variables it is shown whether any accidents happened or traffic tickets were received during the previous 12 months, and whether any injuries or threats were received during the previous 12 months.

For the remainder of the analyses the full range of each answer category is utilized, except for the questions on tickets and accidents after alcohol or marijuana use. For those, the two highest categories, which contained very few cases, have been combined.

---

[2] These two distributions are based on the same question but use a different bracketing of the answer categories.

Table 2 presents three correlation matrices showing the interrelationships between all pairings of independent and dependent variables for the total sample, and separately for males and females.

Finally, Tables 3 through 16 present the analyses that are at the core of the questions raised in this paper, i.e., how the sex differences in the various health-threatening behaviors can be explained. For each health-threatening behavior three or four regression analyses were conducted. In the first regression, sex was included as the only predictor of the health-threatening behavior. In the second regression sex and personal characteristics were included as predictors; in the third regression sex, personal characteristics, and opportunity factors were included; in the fourth regression — which was conducted only for traffic tickets, traffic accidents, and personal threats and injuries — sex, personal characteristics, opportunity factors, and drug use variables were included. In each regression analysis the bivariate effect of sex on the particular dependent variable is compared with the effect of sex when all other variables in the regression are controlled. Each set of multivariate analysis of a particular dependent variable used casewise deletion of missing data.

Due to the comprehensive nature of the model, many predictors of moderate or low strengths are included. In order to pinpoint more closely which predictors are actually responsible for the reduction of the sex differences, regression analyses were repeated including only the strongest predictors. Although not shown in tabular form, interpretations were based on an examination of these regressions as well.

Since the distributions of some of the dependent variables are skewed, particularly those for the frequency of injuries and personal threats and the frequency of tickets and accidents after the consumption of drugs, multivariate analyses that do not assume normal distributions of dependent variables and use a maximum likelihood (rather than a least-squares) estimation procedure were also conducted, using the DREG computer program (Du Mouchel, 1976). For the analysis using DREG the dependent variables were dichotomized. Interpretation of effects are only offered where DREG results are consistent with those based on the results from the two types of regressions described above.

A brief note on statistical significance is in order. Although statistical significance levels were calculated[3] and are reported for all statistics, we used the strength of the relationships as a guide for interpretation. Because of the large sample size even relatively unimportant relationships become significant.

Results

Nature of sex differences

The health-threatening behaviors are displayed by sex in Table 1.

Alcohol consumption. On all three measures males report more alcohol consumption than females. They are more likely to report (a) any alcohol use in the last 30 days, (b) daily use in the last 30 days, and (c) having had five or more drinks at least once during the prior two weeks.

---

[3] Calculation of statistical significance used a design effect of 1.5.

Cigarette smoking. If anything, females smoke more than males in these birth cohorts. A small but statistically significant sex difference exists on the number of cigarettes smoked during the last 30 days, with females smoking more; no significant sex difference exists for smoking of at least one-half of a pack per day. As such, cigarette smoking no longer exhibits the characteristic sex difference that we set out to explain. Nevertheless, we include it here in order to be able to examine all frequently used drugs together.

Marijuana use. Males report using marijuana more frequently than do females, with the difference particularly strong at the daily use level.

Traffic tickets and accidents. Males report having received more traffic tickets during the past 12 months than females and having had more traffic accidents. Males also report more tickets and accidents following the consumption of alcohol or marijuana, although for both sexes the numbers are quite small.

Injury and threat of injury by others. Males report higher frequency of having been threatened with injury or of actually having been injured at some time during the past 12 months. The sex difference is smallest for injury without a weapon, largest for threats of injury. Relatively few seniors were injured with a weapon, but three quarters of those were males.

Relationships between dependent variables

The relationships between the various dependent variables are all positive, but quite low, except for correlations among the different drug use variables, correlations among driving variables, and correlations among victimization variables (Table 2). The patterns of these relationships thus attest to the acceptable reliability of the measures, but do not support the notion that these measures are all simply indicators of a more general unidimensional underlying concept of, say, health-threatening behavior. The correlations with some variables, notably indicators of risky driving behavior, are somewhat higher among males than among females. This difference is most likely a function of the more restricted response variance among females.

Explanations of sex differences

Results of the sets of regression analyses for each form of health-threatening behavior are displayed in Tables 3 through 16. They are briefly summarized below.

Alcohol use. The sex difference in frequency of drinking during the last 30 days is virtually eliminated when the entire explanatory model is applied; the zero-order correlation of $-.17$ is reduced to a standardized regression coefficient of $-.02$.[4] The sex difference in binge drinking is substantially diminished, with the correlation coefficient of $-.23$ being reduced to $-.09$. Personal characteristics contributing to reducing the size of the sex coefficient are involvement in religion and in educational endeavors, as well as a propensity to rebel against authorities and to take risks. These factors are at least partly

[4] The correlation coefficient is equal to the standardized regression coefficient for sex, when sex is the only predictor variable.

mediated by the frequency of going to bars and parties and by the frequency of non-interpersonal delinquent behaviors, both of which also contribute an appreciable independent component to the explanation. In other words, if females were not more involved in education and religion and not less prone to take risks and rebel against authorities, and as a consequence if they were not less likely to go out and to get involved in delinquent behaviors, they might drink nearly as frequently as males.[5]

Cigarette smoking. As noted before, the sex difference on smoking is small and in the opposite direction from all other sex differences to be explained. When the same explanatory model as for the other health-threatening behaviors is utilized, sex differences on smoking become, in fact, clearly and significantly positive. This means that females might be expected to smoke much more than males, if they were identical with males on the various explanatory variables. Put another way, being female is now a positive risk factor for cigarette smoking, other things being equal. Explanatory variables that appear particularly critical in regard to smoking are how involved a respondent is in school and scholastic success, how involved he or she is in religion, and how frequently he or she goes to bars and parties.[6]

Marijuana use. The observed sex difference in marijuana use is eliminated once the control variables are introduced. Religious and educational involvement, along with rebellion against authorities, seem to be critical in eliminating the sex difference. The influences of these characteristics are at least partially mediated by the opportunity factors of going to parties and bars, cutting classes, and non-interpersonal delinquent behaviors.

Traffic tickets. The large sex difference on the number of traffic tickets is substantially reduced when the full explanatory model is used. A first part of the reduction is achieved by rebellion against authority and risk-taking propensity. The amount of paid work also plays a role at this stage. The effects of these factors are largely mediated by the amount of driving done per week and in a minor way by skipping classes and by non-interpersonal delinquent behaviors. The latter factors also account for a substantial independent part of the reduction in sex differences.

When those traffic tickets that were received after alcohol or marijuana consumption are examined, the critical predictors remain risk-taking propensity and rebelliousness against authorities, going to bars and parties and binge drinking or marijuana use, respectively.[7] The causal model reduces the sex difference substantially.

Traffic accidents. Traffic accidents show a similar pattern of findings as traffic tickets: A major explanatory factor is the amount of driving done per week. Contributing

---

[5] The frequency of going to bars and parties variable presents some problems of interpretation. We consider these in the discussion section.

[6] In order to examine the separate effects of going to bars and going to parties, these two variables were also added to regression analyses in disaggregate form. The effect of the index seemed predominantly accounted for by the visit of bars rather than parties.

[7] The multivariate analyses of the number of traffic tickets using the DREG program suggest slight variations in the relative size of the effects of the predictors. This variation in findings are most likely attributable to the skewness of the distributions on these variables. They suggest that some caution in interpreting the regression results is advisable.

in a minor way towards the explanation are rebelliousness against authorities, risk taking propensity and paid work that are mediated by amount of driving and non-interpersonal delinquent behaviors. When these factors are controlled the sex difference is eliminated.

And once again, for accidents that occurred after consumption of alcohol or marijuana only rebellion against authorities and risk taking propensity that are mediated by delinquent behavior remain important contributors to the explanation, and binge drinking or marijuana become additional contributors.

Personal injury. The sex difference in having been injured with a weapon is entirely explained by the explanatory model. The major explanatory factors are rebellion against authorities and interpersonal delinquent behaviors, the latter mediating the former but also explaining an independent component of the sex difference.

The sex difference on being injured without a weapon is small to start with, but the same factors seem to predict it as do predict injury with a weapon, with the addition of some effect of non-interpersonal delinquent behavior. Controlling on these factors makes the sex difference slightly positive (i.e., females would be slightly more subject to injury, if they were as rebellious and delinquent as males).

Threat of injury by others. Sex differences are much reduced but not entirely eliminated when the explanatory model is used. The major factors – as for injury – are rebelliousness against authorities, and delinquent behaviors of the interpersonal and the non-interpersonal type. The latter factors largely mediate the former but explain an additional component of the sex difference.

Summary and Discussion

Except for cigarette smoking, where young women have caught up with young men, sex differences in health-threatening behaviors are very much present today among adolescents. Questions thus remain (1) about what factors account for these differences, and (2) whether one set of explanations might account for all sex differences or whether instead specific explanations have to be sought for each particular behavior.

First and foremost, large portions of the sex differences on the health-threatening behaviors could be explained by the postulated model. In other words, once other factors were controlled the female "advantages" were reduced by 60% to 100%, with an average of about 85%.

What have we learned about the process or processes that account for the sex differences in health-threatening behaviors? We will start with summarizing the findings for each health-threatening behavior and then attempt to integrate findings across the different behaviors. The major opportunity for consuming alcohol that we could identify is visiting bars and parties. Many of the personal characteristics that are quite clearly related to alcohol use – such as the rebellious attitude against the existing authority structure, the risk-proneness, and the lack of commitment to educational and religious institutions operate apparently through bar and party visits. In other words, the rebellious young go to bars and parties where they are able to drink.

While one might argue that these bar visits do not actually "cause" alcohol consumption, because the young people who visit bars go there with the intention to drink, it is nevertheless the bar or party which offers the opportunity to convert these intentions

into behaviors. And it is quite clear that young people with certain orientations seek out these opportunities. In short, although bars are purposefully sought out, they do function as forums where various personal orientations get played out, leading to drug use. Males' greater rejection of the adult world and their greater willingness to take risks is related to the greater frequency with which they visit bars; and the greater frequency of visiting bars, in turn, is strongly related to alcohol use.

Cigarette use is different from alcohol use (and all other health-threatening behaviors to be discussed below) because it shows the opposite or no sex difference at the bivariate level. Yet, when we use the same explanatory model as for the other health-threatening behaviors, the sex difference increases to the disadvantage of young women. It appears that young people who turn away from religious and educational institutions and those who go out often are more likely to smoke. Unlike for alcohol use, these two processes quite independently affect sex differences in cigarette use. If young women were not more devoted to education and religion than young men are, and if young women did not go less to bars and parties, we might expect them to smoke substantially more than young men.

This form of sex difference -- opposite to the one we had been dealing with -- serves to underscore the point that not all sex differences in health-threatening behaviors are consistent in benefitting women. Other examples that are sometimes cited are overweight and lack of exercise, both health-threatening behaviors on which women are at a disadvantage compared with men. Nevertheless, we judge that currently the total of all sex differences combine into an overall advantage in longevity for women. If women (or men) were to change some of their health-threatening behaviors, that might change the balance of the overall advantage. In fact, the change in smoking among women relative to men has already led to an increase in lung cancer among women (United States Department of Health and Human Services, 1980, 1982, 1984).

Marijuana use seems also affected by personal characteristics signaling acceptance or rejection of the adult institutions and by going out and visiting bars and parties. But unlike cigarette and alcohol use, marijuana use seems to be influenced further by delinquent behaviors aimed at the property of others. Since, unlike alcohol and cigarettes, marijuana is an illegal drug, the closer link to delinquent behaviors is quite logical.

Two causal processes seem to be at work in accounting for a large part of the sex differences in the number of traffic tickets. The first process is based on the amount of driving that a young person does: the more miles driven, the higher the likelihood for a traffic ticket. The miles driven, in turn, are partly a function of the amount of paid work, presumably because a car is needed to go to and from work. Since young women are somewhat less likely to work long hours for pay and as a consequence drive less, they run less of a risk of getting a traffic ticket. This process can account for a substantial part of the sex difference in the subset of tickets in general, but less for traffic tickets that were received after alcohol or marijuana consumption.

A second mechanism is more relevant for explaining the sex differences in tickets after alcohol and marijuana, while in this case the effect of miles driven is attenuated. This second process appears to be based on the amount of drinking or marijuana use, and is essentially the same as we had outlined in the above discussion for drug use behaviors: young people who rebel against the existing authority structure and have an inclination towards risky behaviors are more likely to go to bars and parties and to violate property rules. And it is these factors that go hand-in-hand with drug use. A consequence of such drug use, particularly if it happens in bars and at parties, is driving under the influence of drugs and the associated risk of getting caught. Since young women are less likely to

rebel, to want to take risks, to go out and to consume alcohol and marijuana, their risk of driving under the influence of drugs and of getting a ticket because of this is accordingly reduced.

Essentially the same two processes seem to be operating in causing the number of accidents and in reducing the sex differences in number of accidents.

To summarize, risky driving follows two patterns, both of which seem to contribute to the sex differences. The first pattern has to do with the amount of driving that a young person does, which in turn is partly a function of the amount of paid work. This pattern is more relevant for the sex difference observed on overall number of tickets and accidents. The second pattern has to do with the amount of drug use and its causes. This pattern applies particularly to the subset of tickets and accidents which resulted from drug and marijuana use.

The process that leads to being injured by assault, or at least threatened with such injury, is based on delinquent behavior, primarily of the interpersonal but also of the property-type: those who report frequent aggressive behaviors such as getting into fights or hurting others are likely to become the victim of such aggression themselves. Who are the young people who get involved in aggressive behaviors and as a consequence get threatened or injured? Young people who rebel against authority and, to a lesser degree, those who are willing to take risks. And, of course, young men are higher on all of these factors, explaining their higher likelihood of getting injured or threatened.

Let us now return to the questions of whether a similar set of predictors can explain all sex differences, and examine what our data show. Part of the sex differences are undoubtedly accounted for by young men being less committed to educational endeavors, religious pursuits, and particularly by showing a penchant towards risky behaviors and a relatively rebellious stance with respect to the powers-that-be. These findings are consistent with the hypothesis of the relatively risk prone male role leading to health-threatening behaviors, as described in the introduction. The findings are also consistent with the hypothesis that commitments to educational and religious institutions act as barriers to health-threatening behaviors. The data are less consistent with the hypothesis that commitment to paid work should act as an additional barrier. Moreover, the findings suggest a certain similarity of process leading to various health-threatening behaviors. However, this similarity of process ends at the level of personal characteristics.

The personal characteristics express themselves in very different opportunity factors, depending on the particular health-threatening behaviors in question: Drug use appears to be mediated by going to bars and parties, risky driving by amount of driving, and injuries by interpersonal delinquent behaviors. In short, the processes by which sex differences in various health-threatening behaviors can be explained involve similar personal characteristics but different opportunistic situations.

References

Bachman, J.G., and Johnston, L.D. (1978). The Monitoring the Future Project: Design and procedures. (Monitoring the Future Occasional Paper No. 1.) Ann Arbor, MI: Institute for Social Research.

Bachman, J.G., Johnston, L.D., and O'Malley, P.M. (1981). Smoking, drinking and drug use among American high school students: Correlates and trends, 1975 – 1979. American Journal of Public Health, 71, 59–69.

Cimbura, G., Warren, R.A., et al. (1980). Drugs detected in fatally injured drivers and pedestrians in the Province of Ontario. Ottawa: Traffic Injury Research Foundation Reports.

Cohen, L.E., and Felson, M. (1979). Social change and crime rate trends: a routine activity approach. American Sociological Review, 44, 588–608.

Du Mouchel, W.H. (1976). The regression of a dichotomous variable. Technical Memorandum. Ann Arbor, MI: Institute for Social Research.

Gersick, K.E., Grady, K., Sexton, E., and Lyon, M. (1981). Personality and sociodemographic factors in adolescent drug use. In D.J. Lettieri and J.P. Ludford (Eds.), Drug abuse and the American adolescent. (Research Monograph 38.) Rockville, MD: National Institute on Drug Abuse.

Hindelang, M.R., Gottfredson, M., and Garofalo, J. (1978). Victims of personal crime: An empirical foundation for a theory of personal victimization. Cambridge, MA: Ballinger.

Hirschi, T. (1969). Causes of delinquency. Berkley, CA: University of California Press.

Johnson, R.E. (1979). Juvenile delinquency and its origins. New York: Cambridge University Press.

Johnston, L.D., Bachman, J.G., and O'Malley, P.M. (1986a). Monitoring the Future: Questionnaire responses from the nation's high school seniors – 1985. Ann Arbor, MI: Institute for Social Research.

Johnston, L.D., Bachman, J.G., and O'Malley, P.M. (1986b). Drug use among American high school students and other young adults. DHHS Publication No. (ADM) 86–1450. Washington, DC: U.S. Government Printing Office.

Johnston, L.D., O'Malley, P.M., and Eveland, L. (1978). Drugs and delinquency: A search for causal connections. In D.B. Kandel (Ed.), Longitudinal Research on Drug Use: Imperical Findings and Methodological Issues. Washington, DC: Hemisphere Publishers.

Kandel, D.B. (1980). Drug and drinking behavior among youth. Annual Review of Sociology, 6, 235–285.

Kannel, W.B., and Gordon, T. (1980). Cardiovascular risk factors in the aged: The Framingham study. In S.G. Haynes and M. Feinleib (Eds.), Second conference on the epidemiology of aging. NIH Publication No. 80-969. Washington, DC: U.S. Government Printing Office.

Lloyd, L.E., and Venus, P. (1983). Death on Texas roads: the picture worsens for young adults. Texas Medicine, 79, 53–56.

Lopez, A.D. (1983). The sex mortality differential in developed countries. In A.D. Lopez and L.T. Ruzicka (Eds.), Sex differential in mortality. Canberra: Australian National University Press.

Moskowitz, H. (1985). Marijuana and driving. Accident Analysis and Prevention, 17, 323–345.

Nathanson, C.A. (1984). Sex differences in mortality. Annual Review of Sociology, 10, 191–213.

National Center for Health Statistics. (1982a). Vital statistics of the United States, 1978. Vol. II, Part A. DHHS Pub. No. (PHS) 83–1101. Washington, DC: U.S. Government Printing Office.

National Center for Health Statistics. (1982b). Changes in mortality among the elderly: United States, 1940–78. DHHS Pub. No. (PHS) 82–1406.

National Center for Health Statistics. (1983). Sex differences in health and use of medical care: United States, 1979. Series 3, No. 24. (PHS) 83–1408.

Osgood, D.W., Johnston, L.D., O'Malley, P.M., and Bachman, J.G. (1987). The generality and stability of deviance. Institute for Social Research, The University of Michigan. Manuscript under review.

Thompson, K.M, and Wilsnack, R.W. (1984). Drinking and drinking problems among female adolescents: Patterns and influences. In S. Wilsnack and L. Beckman (Eds.), Alcohol problems in women. New York: Guilford.

United States Department of Health and Human Services. (1980). The health consequences of smoking for women: A report of the surgeon general. Rockville, MD: Office on Smoking and Health.

United States Department of Health and Human Services. (1982). The health consequences of smoking – Cancer: A report of the surgeon general. Rockville, MD: Office on Smoking and Health.

United States Department of Health and Human Services. (1984). The health consequences of smoking – Chronic obstructive lung disease: A report of the surgeon general. Rockville, MD: Office on Smoking and Health.

Veevers, J. (1982). Women in the driver's seat: Trends in sex differences in driving and death. Population Research and Policy Review, 1, 171–182.

Veevers, J.E., and Gee, E.M. (1986). Playing it safe: accident mortality and gender roles. Sociological Focus, 19, 349–360.

Verbrugge, L.M. (1976). Sex differentials in morbidity and mortality in the United States. Social Biology, 23, 275–296.

Verbrugge, L.M. (1985). Gender and health: An update on hypotheses and evidence. Journal of Health and Social Behaviors, 26, 156–182.

Waldron, I. (1982). An analysis of causes of sex differences in mortality and morbidity. In W.R. Gove and G.R. Carpenter (Eds.), The fundamental connection of nature and nurture. Lexington, MA: Lexington Books.

Warren, R.A., and Simpson, H.M. (1980). Exposure and alcohol as risk factors in the fatal nighttime collisions of men and women drivers. Journal of Safety Research, 12, 151-156.

Weber, K. (1975). Are men or women better drivers? HIT LAB Reports – January 1975. Volume 5, number 5. Ann Arbor, MI: Highway Safety Research Institute.

Wingard, D.L. (1984). The sex differential in morbidity, mortality, and lifestyle. Annual Review of Public Health, 5, 433-458.

Wolfgang, M.E. (1958). Patterns in criminal homicide. Philadelphia, PA: University of Pennsylvania Press.

Table 1
Health Threatening Behaviors, by Sex

	Males	Females
Any alcoholic drinks during last 30 days	76.7%	67.1%*
Drinking of alcoholic drinks on 20 or more days during the last 30 days	8.1%	3.3%*
Any binge drinking during the last two weeks	54.3%	33.0%*
Any cigarette use during last 30 days	29.0%	32.5%*
1/2 pack of cigarettes or more per day during last 30 days	13.8%	14.6%
Any marijuana use during last 30 days	34.8%	25.7%*
Daily marijuana use during last 30 days	10.0%	4.2%*
Any traffic tickets during last 12 months	37.8%	17.9%*
Any tickets after alcohol consumption during the last 12 months	8.5%	2.4%*
Any tickets after marijuana consumption during the last 12 months	4.1%	1.0%*
Any accidents during the last 12 months	28.8%	19.1%*
Any accidents after alcohol consumption during the last 12 months	5.5%	1.9%*
Any accidents after marijuana consumption during the last 12 months	2.7%	0.8%*
Any injury with a weapon during last 12 months	7.3%	2.1%*
Any threats with a weapon during last 12 months	23.2%	10.3%*
Any injury without a weapon during last 12 months	16.8%	13.4%*
Any threats of injury during the last 12 months	36.1%	20.3%*

* $p < .01$

Table 2
Correlation Matrix, Total Samples

		V2106 BY2B04C:#X D RNK/LAST30DA	V2108 BY2B06 :5+DR K RDW/LST 2W	V2102 BY2B02 :#CIG S SMKD/30DAY	V2117 BY2B07C:#XMJ +HS/LAST30DA	V2197 BY2C28 :#X/1 2MO R TCKTD	R9001 RECODE--TICK ETS ALC	R9003 RECODE--TICK ETS MARJ
BY2B06 :5+DRK RDW/LST 2W	V2108	0.7659						
BY2B02 :#CIGS SMKD/30DAY	V2102	0.3540	0.3458					
BY2B07C:#XMJ+HS/LAST30DA	V2117	0.4860	0.4777	0.4025				
BY2C28 :#X/12MO R TCKTD	V2197	0.2542	0.2756	0.1086	0.1776			
RECODE--TICKETS ALC	R9001	0.2411	0.2695	0.1367	0.2046	0.5061		
RECODE--TICKETS MARJ	R9003	0.1751	0.2039	0.1444	0.2966	0.3673	0.5650	
BY2C30 :#ACCIDNTS/12 MO	V2201	0.1847	0.1895	0.1170	0.1394	0.3084	0.2185	0.1921
RECODE--ACCIDENTS ALC	R9002	0.1974	0.2454	0.1225	0.1689	0.2460	0.3412	0.3030
RECODE--ACCIDENTS MARJ	R9004	0.1462	0.1795	0.1332	0.2551	0.1689	0.2523	0.4098
BY2A20D¬SM1 INJR U W/WPN	V2298	0.1276	0.1501	0.1048	0.1158	0.0952	0.0825	0.0875
BY2A20E¬SM1 THRTN U W/WP	V2299	0.1643	0.2004	0.1361	0.1704	0.1343	0.0908	0.1165
BY2A20F¬SM1 INJR VU -WPN	V2300	0.1189	0.1306	0.1208	0.1268	0.0747	0.0645	0.0720
BY2A20G¬SM1 THRT U W/INJ	V2301	0.1693	0.1788	0.1266	0.1569	0.1389	0.0956	0.1165
BY2E13 :HRS/WK SPND HRWK	V2372	-0.1171	-0.1366	-0.0880	-0.1245	-0.0801	-0.0634	-0.0618
BY2C20 :R HS GRADE/D=1	V2179	-0.1705	-0.2197	-0.2067	-0.1915	-0.1152	-0.0641	-0.0637
BY2E12 :R LIKES SCHOOL	V2371	-0.2446	-0.2372	-0.2316	-0.2416	-0.1257	-0.0842	-0.0976
BY2R :RELIGIOUS COMITMNT	V58	-0.2081	-0.1905	-0.1640	-0.2276	-0.0941	-0.0815	-0.0918
BY2C23 :HRS/W WRK SCHYR	V2191	0.1579	0.1334	0.1183	0.1026	0.1406	0.0559	0.0451
BY2E07B¬3MO/DLY ARG AUTH	V2423	0.2507	0.2549	0.1300	0.1982	0.1813	0.1452	0.1356
RISK-TAKING INDEX	R9005	0.2912	0.2875	0.1150	0.1930	0.1913	0.1353	0.1113
BY2C24A1RS/AVG WEEK JOB	V2192	0.1376	0.1170	0.0849	0.0974	0.1408	0.0455	0.0408
BY2C27¬:DRIVE>200 MI/WK	V2196	0.2402	0.2168	0.0911	0.1093	0.3185	0.1419	0.0895
BY2C25 :#X/AV WK GO OUT	V2194	0.3686	0.3611	0.2306	0.3122	0.1716	0.1354	0.1322
MEAN OF V2223.V2224	R9008	0.6083	0.5671	0.2990	0.3600	0.2117	0.1950	0.1525
BY2R :TRUANCY 10 -65	V59	0.3340	0.3236	0.2148	0.3507	0.2217	0.1744	0.1693
AGGRESSION MEAN	R5001	0.2705	0.3085	0.1643	0.2281	0.1948	0.1841	0.1915
PROPERTY MEAN	R5002	0.3346	0.3368	0.1827	0.3660	0.2453	0.2460	0.2492
BY2C03 :R'S SEX	V2150	-0.1674	-0.2317	0.0270	-0.1314	-0.2365	-0.1287	-0.0958

CORRELATIONS

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D¬SM1 INJR U W/WPN	V2299 BY2A20E¬SM1 THRTN U W/WP	V2300 BY2A20F¬SM1 INJR VU -WPN	V2301 BY2A20G¬SM1 THRT U W/INJ
RECODE--ACCIDENTS ALC	R9002	0.4480						
RECODE--ACCIDENTS MARJ	R9004	0.3300	0.5896					
BY2A20D¬SM1 INJR U W/WPN	V2298	0.0799	0.0848	0.0829				
BY2A20E¬SM1 THRTN U W/WP	V2299	0.1260	0.1137	0.1112	0.4307			
BY2A20F¬SM1 INJR VU -WPN	V2300	0.0809	0.0632	0.0759	0.3233	0.3659		
BY2A20G¬SM1 THRT U W/INJ	V2301	0.1250	0.0907	0.0878	0.2418	0.4985	0.4370	
BY2E13 :HRS/WK SPND HRWK	V2372	-0.0653	-0.0384	-0.0311	-0.0221	-0.0457	-0.0120	-0.0241
BY2C20 :R HS GRADE/D=1	V2179	-0.0680	-0.0646	-0.0574	-0.0735	-0.1267	-0.0571	-0.0684
BY2E12 :R LIKES SCHOOL	V2371	-0.0810	-0.0824	-0.0921	-0.0527	-0.0915	-0.0595	-0.0867
BY2R :RELIGIOUS COMITMNT	V58	-0.0679	-0.0709	-0.0604	-0.0655	-0.0785	-0.0501	-0.0791
BY2C23 :HRS/W WRK SCHYR	V2191	0.1050	0.0541	0.0334	0.0452	0.0772	0.0426	0.0733
BY2E07B¬3MO/DLY ARG AUTH	V2423	0.1426	0.1285	0.1268	0.1362	0.2104	0.1645	0.2404
RISK-TAKING INDEX	R9005	0.1419	0.1168	0.1003	0.1067	0.1734	0.1112	0.1804
BY2C24A1RS/AVG WEEK JOB	V2192	0.0833	0.0410	0.0198	0.0368	0.0509	0.0287	0.0489
BY2C27¬:DRIVE>200 MI/WK	V2196	0.2311	0.1001	0.0721	0.0426	0.0816	0.0014	0.0786
BY2C25 :#X/AV WK GO OUT	V2194	0.1212	0.1083	0.1020	0.0746	0.1230	0.0743	0.1116

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D¬SM1 INJR U W/WPN	V2299 BY2A20E¬SM1 THRTN U W/WP	V2300 BY2A20F¬SM1 INJR VU -WPN	V2301 BY2A20G¬SM1 THRT U W/INJ
MEAN OF V2223,V2224	R9008	0.1604	0.1638	0.1218	0.1150	0.1535	0.0892	0.1387
BY2R :TRUANCY 10 -65	V59	0.1444	0.1320	0.1252	0.1121	0.1585	0.1196	0.1373
AGGRESSION MEAN	R5001	0.1449	0.1473	0.1640	0.4000	0.3973	0.2628	0.2991
PROPERTY MEAN	R5002	0.1978	0.1953	0.2027	0.2572	0.3011	0.2446	0.2963
BY2C03 :R'S SEX	V2150	-0.1191	-0.0909	-0.0712	-0.1053	-0.1609	-0.0293	-0.1710

CORRELATIONS

- continued

		V2372 BY2E13 :HRS/ WK SPND HMWK	V2179 BY2C20 :R HS GRADE/D=1	V2371 BY2E12 :R LI KES SCHOOL	V58 BY2R :RELIGI OUS COMITMNT	V2191 BY2C23 :HRS/ W WRK SCHYR	V2423 BY2E07B¬3MO/ DLY ARG AUTH	R9005 RISK-TAKING INDEX
BY2C20 :R HS GRADE/D=1	V2179	0.2271						
BY2E12 :R LIKES SCHOOL	V2371	0.2267	0.2682					
BY2R :RELIGIOUS COMITMNT	V58	0.1145	0.1417	0.1713				
BY2C23 :HRS/W WRK SCHYR	V2191	-0.0728	-0.0554	-0.1014	-0.0758			
BY2E07B¬3MO/DLY ARG AUTH	V2423	-0.0489	-0.0909	-0.1600	-0.0689	0.0883		
RISK-TAKING INDEX	R9005	-0.1107	-0.1416	-0.1680	-0.1750	0.0907	0.2588	
BY2C24A1RS/AVG WEEK JOB	V2192	-0.1072	-0.0444	-0.0950	-0.0496	0.6771	0.0630	0.0625
BY2C27¬:DRIVE>200 MI/WK	V2196	-0.0591	0.0136	-0.0946	-0.0543	0.2610	0.1267	0.1695
BY2C25 :#X/AV WK GO OUT	V2194	-0.1113	-0.1176	-0.1646	-0.1039	0.0478	0.1648	0.1800
MEAN OF V2223,V2224	R9008	-0.1125	-0.1396	-0.1845	-0.1333	0.1546	0.2273	0.2559
BY2R :TRUANCY 10 -65	V59	-0.1644	-0.2142	-0.2444	-0.1724	0.1207	0.1975	0.2075
AGGRESSION MEAN	R5001	-0.0989	-0.1436	-0.1529	-0.1041	0.0872	0.2815	0.2282
PROPERTY MEAN	R5002	-0.1125	-0.1496	-0.1912	-0.1568	0.0886	0.3006	0.2877
BY2C03 :R'S SEX	V2150	0.1036	0.1527	0.0232	0.1284	-0.1014	-0.1699	-0.2835

CORRELATIONS

- continued

		V2192 BY2C24A1RS/A VG WEEK JOB	V2196 BY2C27¬:DRIV E>200 MI/WK	V2194 BY2C25 :#X/A V WK GO OUT	R9008 MEAN OF V222 3,V2224	V59 BY2R :TRUANC Y 10 -65	R5001 AGGRESSION M EAN
BY2C27¬:DRIVE>200 MI/WK	V2196	0.2309					
BY2C25 :#X/AV WK GO OUT	V2194	0.0780	0.1959				
MEAN OF V2223,V2224	R9008	0.1476	0.2354	0.3817			
BY2R :TRUANCY 10 -65	V59	0.1189	0.1415	0.2275	0.2856		
AGGRESSION MEAN	R5001	0.0841	0.1242	0.2048	0.2692	0.2272	
PROPERTY MEAN	R5002	0.0778	0.1292	0.2105	0.2690	0.3256	0.4605
BY2C03 :R'S SEX	V2150	-0.1063	-0.2551	-0.0837	-0.1183	-0.0950	-0.2093

CORRELATIONS

		R5002 PROPERTY MEAN
BY2C03 :R'S SEX	V2150	-0.2564

***** Normal termination of NDC $ 5.18 27.79 secs

Table 2 (Continued)

Table 2a

Correlation Matrix, Males

		V2106 BY2B04C:#X D RNK/LAST30DA	V2108 BY2B06 :S+DR K RDW/LST 2W	V2102 BY2B02 :#CIG S SMKD/30DAY	V2117 BY2B07C:#XMJ +MS/LAST30DA	V2197 BY2C28 :#X/1 2MO R TCKTD	R9001 RECODE--TICK ETS ALC	R9003 RECODE--TICK ETS MARJ
BY2B06 :S+DRK RDW/LST 2W	V2108	0.7877						
BY2B02 :#CIGS SMKD/30DAY	V2102	0.3219	0.3315					
BY2B07C:#XMJ+MS/LAST30DA	V2117	0.4788	0.4799	0.3827				
BY2C28 :#X/12MO R TCKTD	V2197	0.2454	0.2568	0.1291	0.1751			
RECODE--TICKETS ALC	R9001	0.2582	0.2697	0.1566	0.2165	0.5088		
RECODE--TICKETS MARJ	R9003	0.1953	0.2081	0.1705	0.3324	0.3804	0.5611	
BY2C30 :#ACCIDNTS/12 MO	V2201	0.1701	0.1827	0.1322	0.1469	0.3193	0.2371	0.2126
RECODE--ACCIDENTS ALC	R9002	0.2149	0.2500	0.1404	0.1921	0.2390	0.3358	0.3148
RECODE--ACCIDENTS MARJ	R9004	0.1634	0.1961	0.1577	0.2941	0.1731	0.2672	0.4358
BY2A20D¬SM1 INJR U W/WPN	V2298	0.1420	0.1583	0.1334	0.1076	0.0891	0.0807	0.0847
BY2A20E¬SM1 THRTN U W/WP	V2299	0.1698	0.1853	0.1464	0.1584	0.1191	0.0832	0.1120
BY2A20F¬SM1 INJR YU -WPN	V2300	0.1263	0.1363	0.1067	0.1300	0.0809	0.0815	0.0847
BY2A20G¬SM1 THRT U W/INJ	V2301	0.1407	0.1497	0.1191	0.1268	0.1168	0.0834	0.1107
BY2E13 :HRS/WK SPND HRWK	V2372	-0.1267	-0.1274	-0.0764	-0.1154	-0.0848	-0.0711	-0.0638
BY2C20 :R MS GRADE/D=1	V2179	-0.1568	-0.1881	-0.1880	-0.1812	-0.1047	-0.0513	-0.0606
BY2E12 :R LIKES SCHOOL	V2371	-0.2624	-0.2448	-0.2218	-0.2499	-0.1568	-0.1246	-0.1193
BY2R :RELIGIOUS COMITMNT	V58	-0.1572	-0.1511	-0.1211	-0.2068	-0.0718	-0.0818	-0.0932
BY2C23 :HRS/W WRK SCHYR	V2191	0.1533	0.1452	0.1263	0.0939	0.1510	0.0564	0.0463
BY2E07B¬SMD/DLV ARG AUTH	V2423	0.2349	0.2389	0.1373	0.1857	0.1620	0.1405	0.1400
RISK-TAKING INDEX	R9005	0.2503	0.2366	0.1061	0.1599	0.1567	0.1219	0.1007
BY2C24AIRS/AVG WEEK JOB	V2192	0.1328	0.1266	0.0883	0.0825	0.1513	0.0465	0.0454
BY2C27¬:DRIVE>200 MI/WK	V2196	0.2149	0.1799	0.1132	0.0691	0.2952	0.1250	0.0871
BY2C25 :#X/AV WK GO OUT	V2194	0.3583	0.3537	0.1879	0.3187	0.1691	0.1482	0.1548
MEAN OF V2223,V2224	R9008	0.6036	0.5880	0.2647	0.3555	0.2057	0.2165	0.1683
BY2R :TRUANCY 10 -65	V59	0.3372	0.3229	0.1998	0.3717	0.2238	0.2049	0.2043
AGGRESSION MEAN	R9001	0.2833	0.3077	0.1959	0.2216	0.1723	0.1778	0.1864
PROPERTY MEAN	R9002	0.3258	0.3140	0.1939	0.3648	0.2193	0.2440	0.2567

CORRELATIONS

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D¬SM1 INJR U W/WPN	V2299 BY2A20E¬SM1 THRTN U W/WP	V2300 BY2A20F¬SM1 INJR YU -WPN	V2301 BY2A20G¬SM1 THRT U W/INJ
RECODE--ACCIDENTS ALC	R9002	0.4765						
RECODE--ACCIDENTS MARJ	R9004	0.3622	0.6166					
BY2A20D¬SM1 INJR U W/WPN	V2298	0.0947	0.1034	0.0980				
BY2A20E¬SM1 THRTN U W/WP	V2299	0.1189	0.1252	0.1244	0.4453			
BY2A20F¬SM1 INJR YU -WPN	V2300	0.1043	0.0836	0.0956	0.3773	0.3750		
BY2A20G¬SM1 THRT U W/INJ	V2301	0.1171	0.0951	0.0975	0.2432	0.4891	0.4061	
BY2E13 :HRS/WK SPND HRWK	V2372	-0.0704	-0.0416	-0.0422	-0.0102	-0.0303	-0.0171	-0.0117
BY2C20 :R MS GRADE/D=1	V2179	-0.0541	-0.0570	-0.0542	-0.0615	-0.1051	-0.0427	-0.0385
BY2E12 :R LIKES SCHOOL	V2371	-0.1137	-0.0989	-0.1130	-0.0703	-0.1019	-0.0734	-0.0979
BY2R :RELIGIOUS COMITMNT	V58	-0.0442	-0.0715	-0.0613	-0.0539	-0.0668	-0.0443	-0.0503
BY2C23 :HRS/W WRK SCHYR	V2191	0.0944	0.0581	0.0364	0.0514	0.0846	0.0437	0.0711
BY2E07B¬SMD/DLV ARG AUTH	V2423	0.1471	0.1398	0.1428	0.1338	0.2114	0.1894	0.2546
RISK-TAKING INDEX	R9005	0.1263	0.1053	0.0976	0.1041	0.1536	0.1168	0.1824
BY2C24AIRS/AVG WEEK JOB	V2192	0.0895	0.0451	0.0117	0.0334	0.0499	0.0266	0.0383
BY2C27¬:DRIVE>200 MI/WK	V2196	0.1850	0.0851	0.0603	0.0397	0.0457	-0.0125	0.0513
BY2C25 :#X/AV WK GO OUT	V2194	0.1175	0.1168	0.1302	0.0944	0.1370	0.0820	0.1023
MEAN OF V2223,V2224	R9008	0.1491	0.1725	0.1389	0.1323	0.1708	0.1138	0.1354

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D¬SMI INJR U W/WPN	V2299 BY2A20E¬SMI THRTN U W/WP	V2300 BY2A20F¬SMI INJR YU -WPN	V2301 BY2A20G¬SMI THRT U W/INJ
BY2R :TRUANCY 10 -65	V59	0.1459	0.1486	0.1579	0.1087	0.1654	0.1297	0.1454
AGGRESSION MEAN	R5001	0.1386	0.1466	0.1685	0.4316	0.4278	0.3321	0.3040
PROPERTY MEAN	R5002	0.1929	0.1896	0.2090	0.2511	0.2997	0.2690	0.2899

CORRELATIONS

- continued

		V2372 BY2E13 :HRS/ WK SPND HMWK	V2179 BY2C20 :R HS GRADE/D=1	V2371 BY2E12 :R LI KES SCHOOL	V58 BY2R :RELIGI OUS COMITMNT	V2191 BY2C23 :HRS/ W WRK SCHYR	V2423 BY2E078¬3MO/ DLY ARG AUTH	R9005 RISK-TAKING INDEX
BY2C20 :R HS GRADE/D=1	V2179	0.2172						
BY2E12 :R LIKES SCHOOL	V2371	0.2570	0.2727					
BY2R :RELIGIOUS COMITMNT	V58	0.1187	0.1388	0.1670				
BY2C23 :HRS/W WRK SCHYR	V2191	-0.1023	-0.0683	-0.1002	-0.0438			
BY2E078¬3MO/DLY ARG AUTH	V2423	-0.0421	-0.0498	-0.1765	-0.0523	0.0890		
RISK-TAKING INDEX	R9005	-0.1298	-0.1000	-0.1896	-0.1384	0.0809	0.2414	
BY2C24A1R$/AVG WEEK JOB	V2192	-0.1060	-0.0481	-0.0839	-0.0260	0.6754	0.0643	0.0370
BY2C27¬:DRIVE>200 MI/WK	V2196	-0.0692	0.0271	-0.1200	-0.0080	0.2775	0.1086	0.1368
BY2C25 :#X/AV WK GO OUT	V2194	-0.1144	-0.1178	-0.1744	-0.0821	0.0396	0.1682	0.1814
MEAN OF V2223,V2224	R9008	-0.1137	-0.1248	-0.1808	-0.0918	0.1491	0.2248	0.2303
BY2R :TRUANCY 10 -65	V59	-0.1486	-0.2097	-0.2363	-0.1505	0.1147	0.2038	0.1897
AGGRESSION MEAN	R5001	-0.0853	-0.1193	-0.1816	-0.0771	0.0843	0.2839	0.1988
PROPERTY MEAN	R5002	-0.0992	-0.1239	-0.2201	-0.1221	0.0631	0.2928	0.2581

CORRELATIONS

- continued

		V2192 BY2C24A1R$/A VG WEEK JOB	V2196 BY2C27¬:DRIV E>200 MI/WK	V2194 BY2C25 :#X/A V WK GO OUT	R9008 MEAN OF V222 3,V2224	V59 BY2R :TRUANC Y 10 -65	R5001 AGGRESSION M EAN
BY2C27¬:DRIVE>200 MI/WK	V2196	0.2448					
BY2C25 :#X/AV WK GO OUT	V2194	0.0622	0.1639				
MEAN OF V2223,V2224	R9008	0.1406	0.2293	0.3640			
BY2R :TRUANCY 10 -65	V59	0.1155	0.1214	0.2213	0.2939		
AGGRESSION MEAN	R5001	0.0789	0.1011	0.2260	0.2936	0.2393	
PROPERTY MEAN	R5002	0.0605	0.0836	0.2245	0.2775	0.3482	0.4533

***** Normal termination of MDC $ 2.68 14.35 secs

Table 2a (Continued)

Table 2b

Correlation Matrix, Females

		V2106 BY2B04C:#X D RNK/LAST30DA	V2108 BY2B06 :5+DR K ROW/LST 2W	V2102 BY2B02 :#CIG S SMKD/30DAY	V2117 BY2B07C:#XMJ +MS/LAST30DA	V2197 BY2C28 :#X/1 2MO R TCKTD	R9001 RECODE--TICK ETS ALC	R9003 RECODE--TICK ETS MARJ
BY2B06 :5+DRK ROW/LST 2W	V2108	0.7162						
BY2B02 :#CIGS SMKD/30DAY	V2102	0.4164	0.4044					
BY2B07C:#XMJ+MS/LAST30DA	V2117	0.4710	0.4308	0.4498				
BY2C28 :#X/12MO R TCKTD	V2197	0.1942	0.1896	0.1214	0.0980			
RECODE--TICKETS ALC	R9001	0.1704	0.2147	0.1418	0.1179	0.4328		
RECODE--TICKETS MARJ	R9003	0.1091	0.1535	0.1424	0.1924	0.2669	0.5487	
BY2C30 :#ACCIDNTS/12 MO	V2201	0.1677	0.1441	0.1150	0.0935	0.2431	0.1556	0.1306
RECODE--ACCIDENTS ALC	R9002	0.1377	0.1974	0.1168	0.0916	0.2121	0.3334	0.2367
RECODE--ACCIDENTS MARJ	R9004	0.0934	0.1139	0.1257	0.1533	0.1099	0.1919	0.2887
BY2A20D~SN1 INJR U W/WPN	V2298	0.0447	0.0554	0.0758	0.0761	0.0323	0.0225	0.0502
BY2A20E~SN1 THRTN U W/WP	V2299	0.0842	0.1406	0.1339	0.1374	0.0660	0.0479	0.0893
BY2A20F~SN1 INJR YU -WPN	V2300	0.0975	0.1174	0.1276	0.1176	0.0641	0.0338	0.0612
BY2A20G~SN1 THRT U W/INJ	V2301	0.1485	0.1366	0.1514	0.1548	0.0824	0.0623	0.1006
BY2E13 :HRS/WK SPND HRWK	V2372	-0.0767	-0.1022	-0.1087	-0.1122	-0.0199	-0.0280	-0.0345
BY2C20 :R HS GRADE/D=1	V2178	-0.1369	-0.1848	-0.2428	-0.1734	-0.0514	-0.0363	-0.0331
BY2E12 :R LIKES SCHOOL	V2371	-0.2207	-0.2279	-0.2427	-0.2330	-0.0789	-0.0534	-0.0701
BY2R :RELIGIOUS COMITMNT	V58	-0.2292	-0.1909	-0.2200	-0.2287	-0.0561	-0.0702	-0.0737
BY2C23 :HRS/W WRK SCHYR	V2191	0.1334	0.0729	0.1170	0.0844	0.0842	0.0241	0.0208
BY2E07B~SMD/DLV ARG AUTH	V2423	0.2158	0.1988	0.1328	0.1648	0.1296	0.1009	0.0982
RISK-TAKING INDEX	R9005	0.2663	0.2369	0.1451	0.1709	0.0989	0.0796	0.0818
BY2C24A1RS/AVG WEEK JOB	V2192	0.1109	0.0577	0.0930	0.0870	0.0827	0.0107	0.0093
BY2C27~:DRIVE>200 MI/WK	V2196	0.1983	0.1480	0.0911	0.0937	0.2618	0.1084	0.0623
BY2C25 :#X/AV WK GO OUT	V2194	0.3698	0.3489	0.2775	0.2923	0.1406	0.0979	0.0868
MEAN OF V2223,V2224	R9008	0.5894	0.5160	0.3521	0.3470	0.1736	0.1345	0.1092
BY2R :TRUANCY 10 -65	V59	0.3057	0.2823	0.2456	0.3044	0.1844	0.0966	0.0889
AGGRESSION MEAN	R5001	0.1797	0.1960	0.1653	0.1851	0.0940	0.1105	0.1439
PROPERTY MEAN	R5002	0.2886	0.2686	0.2278	0.3206	0.1438	0.1408	0.1737

CORRELATIONS

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D~SN1 INJR U W/WPN	V2299 BY2A20E~SN1 THRTN U W/WP	V2300 BY2A20F~SN1 INJR YU -WPN	V2301 BY2A20G~SN1 THRT U W/INJ
RECODE--ACCIDENTS ALC	R9002	0.3813						
RECODE--ACCIDENTS MARJ	R9004	0.2492	0.4790					
BY2A20D~SN1 INJR U W/WPN	V2298	0.0093	0.0012	0.0064				
BY2A20E~SN1 THRTN U W/WP	V2299	0.1039	0.0456	0.0393	0.3702			
BY2A20F~SN1 INJR YU -WPN	V2300	0.0536	0.0290	0.0480	0.2519	0.3639		
BY2A20G~SN1 THRT U W/INJ	V2301	0.1002	0.0372	0.0325	0.1926	0.4680	0.4994	
BY2E13 :HRS/WK SPND HRWK	V2372	-0.0155	-0.0189	-0.0046	-0.0156	-0.0306	-0.0008	-0.0003
BY2C20 :R HS GRADE/D=1	V2178	-0.0440	-0.0505	-0.0488	-0.0564	-0.1064	-0.0607	-0.0607
BY2E12 :R LIKES SCHOOL	V2371	-0.0617	-0.0653	-0.0723	-0.0191	-0.0701	-0.0448	-0.0633
BY2R :RELIGIOUS COMITMNT	V58	-0.0676	-0.0501	-0.0452	-0.0517	-0.0523	-0.0498	-0.0723
BY2C23 :HRS/W WRK SCHYR	V2191	0.0993	0.0305	0.0063	0.0044	0.0227	0.0334	0.0385
BY2E07B~SMD/DLV ARG AUTH	V2423	0.1012	0.0806	0.0808	0.0895	0.1550	0.1326	0.1653
RISK-TAKING INDEX	R9005	0.0964	0.0843	0.0687	0.0546	0.1226	0.1040	0.1128
BY2C24A1RS/AVG WEEK JOB	V2192	0.0773	0.0167	0.0158	0.0148	0.0126	0.0270	0.0245
BY2C27~:DRIVE>200 MI/WK	V2196	0.2419	0.0793	0.0587	-0.0218	-0.0111	-.818111E-05	0.0222
BY2C25 :#X/AV WK GO OUT	V2194	0.1063	0.0865	0.0530	0.0256	0.0745	0.0648	0.0905
MEAN OF V2223,V2224	R9008	0.1520	0.1359	0.0818	0.0438	0.0905	0.0787	0.1029

- continued

		V2201 BY2C30 :#ACC IDNTS/12 MO	R9002 RECODE--ACCI DENTS ALC	R9004 RECODE--ACCI DENTS MARJ	V2298 BY2A20D¬SM1 INJR U W/WPN	V2299 BY2A20E¬SM1 THRTN U W/WP	V2300 BY2A20F¬SM1 INJR YU -WPN	V2301 BY2A20G¬SM1 THRT U W/INJ
BY2R :TRUANCY 10 -65	V59	0.1269	0.0847	0.0519	0.0996	0.1178	0.1036	0.0933
AGGRESSION MEAN	R5001	0.1109	0.0994	0.1060	0.2371	0.2494	0.1723	0.2144
PROPERTY MEAN	R5002	0.1417	0.1560	0.1406	0.1736	0.2062	0.2279	0.2131

CORRELATIONS

- continued

		V2372 BY2E13 :HRS/ WK SPND HMWK	V2179 BY2C20 :R HS GRADE/D=1	V2371 BY2E12 :R LI KES SCHOOL	V58 BY2R :RELIGI OUS COMITMNT	V2191 BY2C23 :HRS/ W WRK SCHYR	V2423 BY2E07B¬3MO/ DLY ARG AUTH	R9005 RISK-TAKING INDEX
BY2C20 :R HS GRADE/D=1	V2179	0.2110						
BY2E12 :R LIKES SCHOOL	V2371	0.1954	0.2648					
BY2R :RELIGIOUS COMITMNT	V58	0.0877	0.1128	0.1757				
BY2C23 :HRS/W WRK SCHYR	V2191	-0.0281	-0.0099	-0.0982	-0.0803			
BY2E07B¬3MO/DLY ARG AUTH	V2423	-0.0226	-0.0910	-0.1408	-0.0480	0.0526		
RISK-TAKING INDEX	R9005	-0.0413	-0.1095	-0.1444	-0.1502	0.0473	0.2070	
BY2C24AIRS/AVG WEEK JOB	V2192	-0.0920	-0.0063	-0.0963	-0.0441	0.6758	0.0266	0.0315
BY2C27¬:DRIVE>200 MI/WK	V2196	-0.0014	0.0843	-0.0667	-0.0351	0.2075	0.0606	0.0694
BY2C25 :#X/AV WK GO OUT	V2194	-0.0938	-0.0938	-0.1498	-0.1007	0.0357	0.1310	0.1426
MEAN OF V2223,V2224	R9008	-0.0900	-0.1215	-0.1775	-0.1499	0.1431	0.1950	0.2359
BY2R :TRUANCY 10 -65	V59	-0.1639	-0.1988	-0.2473	-0.1834	0.1089	0.1660	0.1890
AGGRESSION MEAN	R5001	-0.0766	-0.1284	-0.1111	-0.0962	0.0409	0.2375	0.1761
PROPERTY MEAN	R5002	-0.0846	-0.1180	-0.1657	-0.1546	0.0804	0.2376	0.2155

CORRELATIONS

- continued

		V2192 BY2C24AIRS/A VG WEEK JOB	V2196 BY2C27¬:DRIV E>200 MI/WK	V2194 BY2C25 :#X/A V WK GO OUT	R9008 MEAN OF V222 3,V2224	V59 BY2R :TRUANC Y 10 -65	R5001 AGGRESSION M EAN
BY2C27¬:DRIVE>200 MI/WK	V2196	0.1819					
BY2C25 :#X/AV WK GO OUT	V2194	0.0773	0.1903				
MEAN OF V2223,V2224	R9008	0.1347	0.2004	0.3882			
BY2R :TRUANCY 10 -65	V59	0.1028	0.1252	0.2200	0.2557		
AGGRESSION MEAN	R5001	0.0400	0.0365	0.1555	0.1860	0.1589	
PROPERTY MEAN	R5002	0.0578	0.0557	0.1739	0.2183	0.2720	0.3645

***** Normal termination of MDC $ 2.66 14.21 secs

Table 2b (Continued)

Table 3
Regression Analyses for the Number of Drinks
Consumed During the Last 30 Days

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]	
Personal Characteristics			
SEX	-.17*	-.05*	-.02*
HOURS OF HOMEWORK/WEEK	-.12*	-.02	.01
GRADE POINT AVERAGE	-.17*	-.06*	-.02*
LIKING OF SCHOOL	-.25*	-.14*	-.07*
RELIGIOUS COMMITMENT	-.21*	-.12*	-.07*
HOURS OF PAID WORK/WEEK	.16*	.09*	.03*
ARGUMENTS WITH AUTHORITY	.25*	.15*	.03*
RISK-TAKING PROPENSITY	.30*	.18*	.06*
Opportunity factors			
WAGES/WEEK	.14*		.00
MILES DRIVEN/WEEK	.24*		.05*
TIMES GOING OUT/WEEK	.37*		.10*
FREQUENCY BARS AND PARTIES	.62*		.47*
SKIPPING SCHOOL	.33*		.08*
AGGRESSIVE BEHAVIORS	.26*		-.01
PROPERTY VIOLATIONS	.34*		.10*
R^2		.18	.46

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 4
Regression Analyses for Five Drinks or More
Consumed During the Last 30 Days

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]	
<u>Personal Characteristics</u>			
SEX	-.23*	-.12*	-.09*
HOURS OF HOMEWORK/WEEK	-.14*	-.03*	.00
GRADE POINT AVERAGE	-.22*	-.11*	-.07*
LIKING OF SCHOOL	-.24*	-.12*	-.06*
RELIGIOUS COMMITMENT	-.19*	-.09*	-.05*
HOURS OF PAID WORK/WEEK	.14*	.07*	.03*
ARGUMENTS WITH AUTHORITY	.25*	.15*	.03*
RISK-TAKING PROPENSITY	.29*	.15*	.04*
<u>Opportunity factors</u>			
WAGES/WEEK	.11*		-.03*
MILES DRIVEN/WEEK	.21*		.02
TIMES GOING OUT/WEEK	.37*		.11*
FREQUENCY BARS AND PARTIES	.57*		.41*
SKIPPING SCHOOL	.32*		.07*
AGGRESSIVE BEHAVIORS	.30*		.05*
PROPERTY VIOLATIONS	.34*		.08*
R^2		.19	.43

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 5
Regression Analyses for the Number of Cigarettes
Smoked During the Last 30 Days

Predictors	Correlation Coefficients	Standardized Regression Coeffiecients[1]	
Personal Characteristics			
SEX	.03	.11*	.13*
HOURS OF HOMEWORK/WEEK	-.09*	.00	.02
GRADE POINT AVERAGE	-.21*	-.15*	-.12*
LIKING OF SCHOOL	-.23*	-.14*	-.10*
RELIGIOUS COMMITMENT	-.16*	-.11*	-.08*
HOURS OF PAID WORK/WEEK	.12*	.09*	.07*
ARGUMENTS WITH AUTHORITY	.13*	.08*	.01
RISK-TAKING PROPENSITY	.12*	.06*	.00
Opportunity factors			
WAGES/WEEK	.09*		-.02
MILES DRIVEN/WEEK	.09*		.01
TIMES GOING OUT/WEEK	.24*		.10*
FREQUENCY BARS AND PARTIES	.30*		.18*
SKIPPING SCHOOL	.21*		.04*
AGGRESSIVE BEHAVIORS	.18*		.04*
PROPERTY VIOLATIONS	.19*		.06*
R^2		.11	.18

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 6
Regression Analyses for the Number of Occasions on Which Marijuana and Hashish Were Consumed During the Last 30 Days

Predictors	Correlation Coefficients		Standardized Regression Coefficients[1]
Personal Characteristics			
SEX	-.12*	-.04*	-.01
HOURS OF HOMEWORK/WEEK	-.13*	-.03*	.00
GRADE POINT AVERAGE	-.19*	-.09*	-.05*
LIKING OF SCHOOL	-.25*	-.15*	-.08*
RELIGIOUS COMMITMENT	-.23*	-.15*	-.11*
HOURS OF PAID WORK/WEEK	.10*	.04*	.01
ARGUMENTS WITH AUTHORITY	.20*	.12*	.02*
RISK-TAKING PROPENSITY	.19*	.08*	-.02
Opportunity factors			
WAGES/WEEK	.10*		.01
MILES DRIVEN/WEEK	.11*		-.03*
TIMES GOING OUT/WEEK	.32*		.14*
FREQUENCY BARS AND PARTIES	.36*		.18*
SKIPPING SCHOOL	.35*		.15*
AGGRESSIVE BEHAVIORS	.22*		-.02
PROPERTY VIOLATIONS	.36*		.20*
R^2		.14	.28

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 7
Regression Analyses for the Number of Traffic Tickets During the Last 12 Months

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.24*	-.17*	-.10*	-.09*
HOURS OF HOMEWORK/WEEK	-.08*	-.01	.01	.01
GRADE POINT AVERAGE	-.12*	-.04*	-.04*	-.03
LIKING OF SCHOOL	-.12*	-.06*	-.01	-.01
RELIGIOUS COMMITMENT	-.09*	-.03*	.00	.00
HOURS OF PAID WORK/WEEK	.14*	.10*	.02	.02
ARGUMENTS WITH AUTHORITY	.18*	.10*	.04*	.04*
RISK-TAKING PROPENSITY	.21*	.10*	.04*	.03*
Opportunity factors				
WAGES/WEEK	.14*		.02	.02
MILES DRIVEN/WEEK	.32*		.22*	.22*
TIMES GOING OUT/WEEK	.19*		.04*	.03*
FREQUENCY BARS AND PARTIES	.22*		.04*	-.01
SKIPPING SCHOOL	.23*		.10*	.09*
AGGRESSIVE BEHAVIORS	.20*		.04*	.03*
PROPERTY VIOLATIONS	.26*		.10*	.09*
Drug use				
NUMBER DRINKS/30 DAYS	.26*			.01
NUMBER 5+ DRINKS IN A ROW	.28*			.11*
NUMBER CIGARETTES/30 DAYS	.12*			-.01
NUMBER MARIJUANA & HASHISH/30 DAYS	.19*			-.01
R^2		.11	.19	.20

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 8
Regression Analyses for the Number of Traffic Tickets
After Alcohol Consumption During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.13*	-.08*	-.04*	-.03
HOURS OF HOMEWORK/WEEK	-.07*	-.03	-.01	-.01
GRADE POINT AVERAGE	-.08*	-.01	.00	.02
LIKING OF SCHOOL	-.11*	-.05*	-.02	.00
RELIGIOUS COMMITMENT	.09*	-.04*	-.02	.00
HOURS OF PAID WORK/WEEK	.06*	.03*	.00	.00
ARGUMENTS WITH AUTHORITY	.15*	.10*	.03*	.02
RISK-TAKING PROPENSITY	.15*	.07*	.01	.01
Opportunity factors				
WAGES/WEEK	.05*		-.02	-.01
MILES DRIVEN/WEEK	.15*		.07*	.07*
TIMES GOING OUT/WEEK	.14*		.02	-.01
FREQUENCY BARS AND PARTIES	.21*		.09*	.01
SKIPPING SCHOOL	.19*		.07*	.05*
AGGRESSIVE BEHAVIORS	.20*		.07*	.06*
PROPERTY VIOLATIONS	.24*		.12*	.10*
Drug use				
NUMBER DRINKS/30 DAYS	.25*			.01
NUMBER 5+ DRINKS IN A ROW	.29*			.16*
NUMBER CIGARETTES/30 DAYS	.16*			.03*
NUMBER MARIJUANA & HASHISH/30 DAYS	.21*			.04*
R^2		.05	.10	.12

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 9
Regression Analyses for the Number of Traffic Tickets
After Marijuana Consumption During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.10*	-.05*	-.01	-.01
HOURS OF HOMEWORK/WEEK	-.07*	-.03	-.01	-.01
GRADE POINT AVERAGE	-.07*	-.01	.00	.02
LIKING OF SCHOOL	-.10*	-.05*	-.01	.01
RELIGIOUS COMMITMENT	-.09*	-.05*	-.03*	.00
HOURS OF PAID WORK/WEEK	.05*	.02	.01	.00
ARGUMENTS WITH AUTHORITY	.15*	.11*	.04*	.04*
RISK-TAKING PROPENSITY	.12*	.05*	.00	.00
Opportunity factors				
WAGES/WEEK	.04*		-.01	-.01
MILES DRIVEN/WEEK	.10*		.03	.04*
TIMES GOING OUT/WEEK	.14*		.04*	.00
FREQUENCY BARS AND PARTIES	.17*		.05*	.01
SKIPPING SCHOOL	.17*		.07*	.03
AGGRESSIVE BEHAVIORS	.20*		.09*	.09*
PROPERTY VIOLATIONS	.23*		.12*	.08*
Drug use				
NUMBER DRINKS/30 DAYS	.18*			-.07*
NUMBER 5+ DRINKS IN A ROW	.22*			.07*
NUMBER CIGARETTES/30 DAYS	.16*			.02
NUMBER MARIJUANA & HASHISH/30 DAYS	.30*			.22*
R^2		.04	.08	.12

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 10
Regression Analyses for the Number of Accidents
During the Last 12 Months

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.12*	-.06*	.00	.00
HOURS OF HOMEWORK/WEEK	-.06*	-.02	-.01	-.01
GRADE POINT AVERAGE	-.07*	-.02	-.02	-.01
LIKING OF SCHOOL	-.09*	-.04*	-.01	.00
RELIGIOUS COMMITMENT	-.06*	-.02	.00	.01
HOURS OF PAID WORK/WEEK	.11*	.08*	.03	.02
ARGUMENTS WITH AUTHORITY	.15*	.10*	.05*	.05*
RISK-TAKING PROPENSITY	.15*	.09*	.04*	.04*
Opportunity factors				
WAGES/WEEK	-.09*		.00	.00
MILES DRIVEN/WEEK	.24*		.18*	.18*
TIMES GOING OUT/WEEK	.12*		.01	.00
FREQUENCY BARS AND PARTIES	.16*		.03*	.00
SKIPPING SCHOOL	.15*		.04*	.03*
AGGRESSIVE BEHAVIORS	.16*		.04*	.03*
PROPERTY VIOLATIONS	.21*		.11*	.10*
Drug use				
NUMBER DRINKS/30 DAYS	.19*			.01
NUMBER 5+ DRINKS IN A ROW	.19*			.05*
NUMBER CIGARETTES/30 DAYS	.12*			.03*
NUMBER MARIJUANA & HASHISH/30 DAYS	.14*			.00
R^2		.05	.10	.10

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 11
Regression Analyses for the Number of Accidents
After Alcohol Consumption During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.09*	-.04*	.00	.00
HOURS OF HOMEWORK/WEEK	-.05*	.01	.00	.00
GRADE POINT AVERAGE	-.07*	-.02	-.01	.00
LIKING OF SCHOOL	-.09*	-.04*	-.01	.00
RELIGIOUS COMMITMENT	-.07*	.03*	-.01	.00
HOURS OF PAID WORK/WEEK	.07*	.04*	.03	.03
ARGUMENTS WITH AUTHORITY	.14*	.09*	.03*	.02
RISK-TAKING PROPENSITY	.13*	.07*	.02	.02
Opportunity factors				
WAGES/WEEK	.04*		-.02	-.02
MILES DRIVEN/WEEK	.11*		.04*	.04*
TIMES GOING OUT/WEEK	.12*		.02	.00
FREQUENCY BARS AND PARTIES	.18*		.08*	.01
SKIPPING SCHOOL	.13*		.03	.01
AGGRESSIVE BEHAVIORS	.18*		.06*	.05*
PROPERTY VIOLATIONS	.21*		.11*	.10*
Drug use				
NUMBER DRINKS/30 DAYS	.21*			-.03
NUMBER 5+ DRINKS IN A ROW	.26*			.18*
NUMBER CIGARETTES/30 DAYS	.13*			.02
NUMBER MARIJUANA & HASHISH/30 DAYS	.17*			.02
R^2		.04	.07	.09

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 12
Regression Analyses for the Number of Accidents
After Marijuana Consumption During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.08*	-.03*	.00	.00
HOURS OF HOMEWORK/WEEK	-.04*	.00	.01	.01
GRADE POINT AVERAGE	-.07*	-.02	.00	.01
LIKING OF SCHOOL	-.09*	-.04*	-.02	.00
RELIGIOUS COMMITMENT	-.07*	-.04*	-.02	.00
HOURS OF PAID WORK/WEEK	.04*	.01	.02	.01
ARGUMENTS WITH AUTHORITY	.13*	.10*	.04*	.03*
RISK-TAKING PROPENSITY	.11*	.06*	.01	.02
Opportunity factors				
WAGES/WEEK	.02		-.03	-.03
MILES DRIVEN/WEEK	.06*		.01	.02
TIMES GOING OUT/WEEK	.11*		.03*	.00
FREQUENCY BARS AND PARTIES	.14*		.04*	.00
SKIPPING SCHOOL	.13*		.04*	.01
AGGRESSIVE BEHAVIORS	.18*		.08*	.07*
PROPERTY VIOLATIONS	.20*		.12*	.08*
Drug use				
NUMBER DRINKS/30 DAYS	.16*			-.07*
NUMBER 5+ DRINKS IN A ROW	.19*			.09*
NUMBER CIGARETTES/30 DAYS	.14*			.03
NUMBER MARIJUANA & HASHISH/30 DAYS	.25*			.18*
R^2		.03	.06	.09

[1]All variables that have an entry for regression coefficient are included in regression

* p < .01

Table 13
Regression Analyses for Injury With a Weapon
During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.11*	-.06*	.00	.00
HOURS OF HOMEWORK/WEEK	-.02	.01	.02	.02
GRADE POINT AVERAGE	-.06*	-.03	.00	.01
LIKING OF SCHOOL	-.06*	-.01	.03	.03*
RELIGIOUS COMMITMENT	-.05*	-.02	-.01	-.01
HOURS OF PAID WORK/WEEK	.06*	.03*	.01	.01
ARGUMENTS WITH AUTHORITY	.16*	.12*	.00	.01
RISK-TAKING PROPENSITY	.13*	.07*	.01	.01
Opportunity factors				
WAGES/WEEK	.05*		.00	.01
MILES DRIVEN/WEEK	.06*		-.01	-.01
TIMES GOING OUT/WEEK	.08*		-.01	-.01
FREQUENCY BARS AND PARTIES	.12*		-.02	-.02
SKIPPING SCHOOL	.12*		.01	.01
AGGRESSIVE BEHAVIORS	.44*		.40*	.40*
PROPERTY VIOLATIONS	.26*		.08*	.08*
Drug use				
NUMBER DRINKS/30 DAYS	.13*			-.02
NUMBER 5+ DRINKS IN A ROW	.16*			.04*
NUMBER CIGARETTES/30 DAYS	.11*			.04*
NUMBER MARIJUANA & HASHISH/30 DAYS	.11*			-.02
R^2		.04	.20	.20

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 14
Regression Analyses for Injury Without a Weapon
During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.04*	.01	.06*	.05*
HOURS OF HOMEWORK/WEEK	-.01	.02	.03*	.03*
GRADE POINT AVERAGE	-.06*	-.03	.00	.00
LIKING OF SCHOOL	-.07*	-.02	.01	.01
RELIGIOUS COMMITMENT	-.04*	-.01	.00	.00
HOURS OF PAID WORK/WEEK	.04*	.02	.01	.00
ARGUMENTS WITH AUTHORITY	.18*	.15*	.07*	.07*
RISK-TAKING PROPENSITY	.12*	.07*	.03	.03*
Opportunity factors				
WAGES/WEEK	.03		.01	.01
MILES DRIVEN/WEEK	.01		-.04*	-.04*
TIMES GOING OUT/WEEK	.08*		.00	.00
FREQUENCY BARS AND PARTIES	.10*		-.01	-.02
SKIPPING SCHOOL	.12*		.02	.02
AGGRESSIVE BEHAVIORS	.29*		.21*	.20*
PROPERTY VIOLATIONS	.26*		.15*	.15*
Drug use				
NUMBER DRINKS/30 DAYS	.12*			-.01
NUMBER 5+ DRINKS IN A ROW	.13*			.00
NUMBER CIGARETTES/30 DAYS	.12*			.05*
NUMBER MARIJUANA & HASHISH/30 DAYS	.12*			.00
R^2		.04	.11	.11

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 15
Regression Analyses for Threat With a Weapon
During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.16*	-.08*	-.04*	-.04*
HOURS OF HOMEWORK/WEEK	-.05*	.01	.02	.02
GRADE POINT AVERAGE	-.12*	-.07*	-.04*	-.03*
LIKING OF SCHOOL	-.10*	-.03*	.00	.01
RELIGIOUS COMMITMENT	-.07*	-.02	.00	.00
HOURS OF PAID WORK/WEEK	.08*	.04*	.05*	.04*
ARGUMENTS WITH AUTHORITY	.23*	.17*	.07*	.07*
RISK-TAKING PROPENSITY	.19*	.09*	.04*	.04*
Opportunity factors				
WAGES/WEEK	.05*		-.03	-.02
MILES DRIVEN/WEEK	.08*		-.02	-.02
TIMES GOING OUT/WEEK	.13*		.01	.00
FREQUENCY BARS AND PARTIES	.16*		.00	-.01
SKIPPING SCHOOL	.17*		.02	.02
AGGRESSIVE BEHAVIORS	.42*		.32*	.31*
PROPERTY VIOLATIONS	.31*		.11*	.11*
Drug use				
NUMBER DRINKS/30 DAYS	.17*			-.04*
NUMBER 5+ DRINKS IN A ROW	.21*			.05*
NUMBER CIGARETTES/30 DAYS	.15*			.05*
NUMBER MARIJUANA & HASHISH/30 DAYS	.17*			.00
R^2		.08	.20	.21

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

Table 16
Regression Analyses for Threat With Injury
During the Last Year

Predictors	Correlation Coefficients	Standardized Regression Coefficients[1]		
Personal Characteristics				
SEX	-.18*	-.11*	-.07*	-.08*
HOURS OF HOMEWORK/WEEK	-.03	.02	.03*	.03*
GRADE POINT AVERAGE	-.08*	-.02	.00	.00
LIKING OF SCHOOL	-.09*	-.03	.00	.01
RELIGIOUS COMMITMENT	-.08*	-.03*	-.01	-.01
HOURS OF PAID WORK/WEEK	.08*	.03*	.04*	.04*
ARGUMENTS WITH AUTHORITY	.25*	.20*	.12*	.12*
RISK-TAKING PROPENSITY	.19*	.09*	.04*	.04*
Opportunity factors				
WAGES/WEEK	.05*		-.02	-.02
MILES DRIVEN/WEEK	.08*		-.01	-.01
TIMES GOING OUT/WEEK	.12*		.01	.00
FREQUENCY BARS AND PARTIES	.15*		.00	-.02
SKIPPING SCHOOL	.15*		.01	.01
AGGRESSIVE BEHAVIORS	.33*		.19*	.19*
PROPERTY VIOLATIONS	.32*		.16*	.15*
Drug use				
NUMBER DRINKS/30 DAYS	.18*			.02
NUMBER 5+ DRINKS IN A ROW	.18*			-.01
NUMBER CIGARETTES/30 DAYS	.14*			.07*
NUMBER MARIJUANA & HASHISH/30 DAYS	.15*			-.01
R^2		.10	.16	.17

[1]All variables that have an entry for regression coefficient are included in regression

* $p < .01$

ISR

SURVEY RESEARCH CENTER
INSTITUTE FOR SOCIAL RESEARCH
THE UNIVERSITY OF MICHIGAN